

AIR MATTRESS WITH PILLOW TOP

Cross Reference to Related Applications

None.

Statement Regarding Federally Sponsored Research or Development

Not applicable.

Background of the Invention

This invention relates generally to air mattresses and more particularly to a air mattress with an second inflatable layer on top to provide a "pillow top" appearance and feel to the mattress.

The standard air mattress also could be improved in appearance and feel. The single vinyl top sheet of these mattresses is rather typically plain and flat in appearance, even with a pattern embossed thereon. Conventional mattresses, on the other hand, traditionally have a tufted or quilted appearance which people find attractive.

Moreover, conventional mattresses often have a different feel to the user than that achieved with conventional air mattresses. Such mattresses could be more acceptable with a better feel.

Summary of the Invention

Among the various features of the present invention may be noted the provision of an air mattress in which the comfort is improved.

Another feature is the provision of such a air mattress with an improved appearance.

A third feature is the provision of such a air mattress with increased versatility.

Other objects and features will be in part apparent and in part pointed out hereinafter.

Briefly, in its broadest aspect an air mattress of the present invention includes a first inflatable compartment having a length and width, when inflated, sufficient to support a human body. The first compartment has a top, a bottom, and sides and is composed of at least two layers of vinyl, one layer of vinyl forming the top of the compartment and the second forming the bottom. The mattress also includes a second inflatable compartment disposed on the top of the first inflatable compartment and secured

thereto at least along a portion of the first inflatable compartment. The second compartment extends generally the length and width of the top of the first compartment and is of a size, when inflated, sufficient to support a human body. The second compartment is composed of at least two layers of vinyl distinct from the two layers of vinyl forming the first compartment and is inflatable to give the top of the air mattress a soft, pillow-like appearance and feel.

Brief Description of the Drawings

~~FIG. 1 is a perspective view illustrating the air mattress of the present invention;~~

FIG. 2 is an exploded perspective view of the air mattress of FIG. 1;

FIG. 3 is a partial sectional view, with parts broken away for clarity, of the air mattress of FIG. 1;

and

~~FIG. 4 is a perspective view of a portion of the air mattress of the present invention, showing the seal between the top and bottom compartments of the air mattress.~~

Similar reference characters indicate similar parts throughout the several views of the drawings.

Description of the Preferred Embodiment

Turning to the drawings and more specifically to FIGS. 1 and 2, an air mattress 11 of the present invention includes a first inflatable compartment 13 having a length and width, when inflated, sufficient to support a human body. Compartment 13 is composed of a first vinyl sheet 15 forming a top of the compartment, a second vinyl sheet 17 forming a bottom of the compartment, and a vinyl strip 19 forming the sides of the compartment. Preferably the first inflatable compartment 13 may be inflated by means of a standard inflate, or inflate/deflate, valve 20 disposed at a convenient location in the wall of compartment 13.

Air mattress 11 also includes a second inflatable compartment 21 disposed on the top of the first inflatable compartment 13 and secured thereto at least along a portion of the first inflatable compartment (as is shown in Figs. 3 and 4). Second compartment 21 extends generally the length and width of the top 15 of the first compartment 13 and is of a size, when inflated, sufficient to support a human body.

The second compartment 21 is composed of a first vinyl layer 23 forming the top of the second compartment, a second vinyl layer 25 forming the bottom of the second compartment, and a vinyl strip 27 forming the sides of the second compartment. The second compartment is inflatable to give the top of the air mattress a soft, pillow-like appearance and feel. It is preferred that the top of second compartment 21 include a soft, non-vinyl fabric or surface secured thereto.

Fig. 1 also shows an optional pump 28 that may be used to inflate or inflate/deflate the compartments. The pump may be attached permanently to valve 20, if desired, or may be attached temporarily to the valve by the user.

As can be seen more clearly in Figs. 3 and 4, the first and second compartments are secured together along, but spaced inwardly from, the perimeter. This is shown most clearly in Fig. 4 where the perimeter seal is labeled 31. For example, the perimeter seal 31 may be recessed approximately one inch from the edge of the mattress. This seal connects the top vinyl layer 15 of the first compartment to the bottom vinyl layer 25 of the second compartment. In addition, the compartments are sealed together (at seals 33) adjacent a plurality of holes 35 that provide fluid communication channel connecting the first and second compartments. Of course, if desired, the first and second compartments should also be secured together at other places. The seals may be formed using any known sealing method.

It is preferred that the compartments have a single inflation/deflation valve 20, and that (in the embodiment shown in Fig. 1) the inflation air for the second compartment flow initially into the first compartment. Of course, the single inflation/deflation valve could be disposed in a wall of the second compartment instead, in which case inflating air flow would be from the second compartment to the first.

As can be seen in Figs. 2 and 3, the vinyl layers of the first compartment are held together along the perimeter by vinyl strip 19 and internally by a plurality of spaced ribs 41. Ribs 41 are preferably formed of vinyl, extend transversely across the compartment, and are sealed to the vinyl layers of the first compartment along their length. The ribs are preferably notched on each end as shown in Fig. 3 and

terminate short of seal 31. This provides for air flow around the ribs and permits the portions of the compartments outboard of the seal 31 to flex relatively independently of each other.

Similarly, second compartment 21 includes a plurality of ribs 45 that serve the same functions for the second compartment that ribs 41 serve for the first compartment. It is preferred that first compartment 13 be somewhat taller, when inflated, than second compartment 21. For this reason, ribs 41 are preferably taller than ribs 45. For example, ribs 41 can be approximately four inches in height, while ribs 45 would be approximately three inches in height. Other dimensions could of course be used.

The construction of air mattress 11 as shown in the drawings leaves the first and second compartments substantially free to move with respect to each other except at their periphery. Specifically, sealing the compartments together substantially only along the exterior portion allows the inner portions of the compartments to move substantially with respect to one another, thereby improving the feel of the mattress. Similarly, the fact that the primary seal 31 is recessed from the periphery of the two compartments permits limited relative movement of the second compartment with respect to the first compartment along the edge of the mattress.

Turning to Figs. 5A-5C, there are shown certain variations in the pillow top of the present invention. Fig. 5A illustrates in simplified form the construction of Fig. 3, with the addition of a plurality of holes 51 and 53 through ribs 45 and 41 respectively. These holes provide increased airflow back and forth in the two compartments. It should be appreciated that the second compartment in this construction has two seams and forms a gusset.

Fig. 5B illustrates a similar construction in which the top (second) compartment is constructed with a seam 55 in its vertical wall. This construction provides a more two-dimensional pillow top appearance (as opposed to the three-dimensional effect of the construction of Fig. 5A). Similarly, Fig. 5C illustrates another two-dimensional-type construction in which the top layer 23 of second compartment 21 and the bottom layer 25 of that compartment are joined together by discontinuous seals 59. For example, each seal could be a circle, or could run for only a few inches or so. Air in the second

compartment in this construction flows around the seals 59. This construction provides a pleasing, tufted appearance to the pillow top of the mattress.

It should be appreciated that the air mattress of the present invention may be constructed in various sizes and shapes. It may be packaged and sold or stored in a bag, if desired.

In view of the above it will be seen that the various objects and features of the invention are achieved and other advantageous results obtained. The examples contained herein are merely illustrative and are not intended in a limiting sense.

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